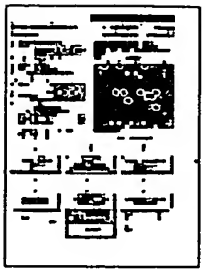
Title: **JP5145246A2: LINE MATERIAL SUPPORTER**

Derwent Title: Supporting tool for wire material used in electronic appts. - has damper formed by curvature component, arranged between clamp and fixing portion, absorbs vibration added to tool, and prevents run off of tool from substrate NoAbstract [Derwent Record]

Country: **JP** Japan
Kind: **A**



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Application Number: **JP1991000332563**

IPC Code: **H05K 7/00;** H04N 5/64;

Priority Number: 1991-11-20 **JP1991000332563**

Abstract:

PURPOSE: To prevent the coming off of a line material or the coming off of a line supporter in the case that force such as vibration, etc., is added, in a line supporter which supports the line material such as a signal transmission line, etc., in the specified position inside electric equipment.

CONSTITUTION: A damper part 1i consisting of a bend member is provided between a clamp part 1a and a fixing member 1b. In case force such as vibration, etc., is added to a line supporter 1, the force is absorbed by the damper 1i, and the coming off of a line material 3 from the clamp part 1a or the coming off of a line supporter 1 from a board 2, etc., is prevented.

Family: None

Other Abstract Info: DERABS G93-222608 DERG93-222608

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application] This invention relates to the wire rod support which supports the wire rod wired in the building envelope of an electric appliance.
[0002]
[Description of the Prior Art] The conventional wire rod support 31 consists of connection section 31c which connects clamp section 31a, fixed part 31b fixed to the holddown member-ed of the building envelope of an electric appliance, and clamp section 31a and fixed part 31b, as shown in drawing 3 . For example, in TV, by fixing fixed part 31b on a substrate, and wire rods, such as sound or a signal transduction line of an image, twining the upper part of clamp section 31a around clamp section 31a, it clamped and the wire rod was supported in the predetermined position on a substrate.
[0003] And connection section 31c was constituted by connecting clamp section 31a and fixed part 31b in the shape of a straight line.
[0004]
[Problem(s) to be Solved by the Invention] Therefore, although the vibration gets across also to a wire rod when vibration is added to an electric appliance, since a wire rod has predetermined weight, it becomes a big oscillating inertia force and the force gets across to a wire rod support conversely.
[0005] However, since connection section 31c is formed in **** in the shape of a straight line like, the force which got across to the above-mentioned wire rod support 31 gets across to fixed part 31b as tensile force or compressive force in a size as it is, or gets across to clamp section 31a as compressive force or tensile force in a size as it is as the counteraction. That is, in a vibration test etc., when stress is added to connection section 31c, stress has joined fixed part 31b and clamp section 31a as it is, without the ability of connection section 31c which can hardly be expanded and contracted absorbing stress.
[0006] Therefore, there was a trouble that fixed part 31b separates from a substrate etc., or clamp section 31a solved and a wire rod separated by this. At this time, if a wire rod approaches a portion with much disturbance of a circuit especially, it will become the cause of degradation of performances, such as quality of image and tone quality, and a problem arises at safety, so that the safety standard will not be filled, if a wire rod approaches DC at the upstream AC power before conversion.
[0007] Then, the purpose of this invention is about the force to offer a wire rod support absorbable enough, when the force is applied.
[0008]
[Means for Solving the Problem] In order to attain the above-mentioned purpose, the wire rod support of this invention possesses the damper section which was prepared between the clamp section which clamps a wire rod, the fixed part fixed to the holddown member-ed in an electric appliance, and the clamp section and a fixed part and which consists of bend material.
[0009] Not only the member at which it has turned smoothly with bend material here but the member at which it has turned acutely is contained.
[0010]
[Function] Since bend material is prepared between the clamp section and the fixed part, the force which the force which joined the wire rod support gets across to bend material, and is absorbed as bending force of bend material, therefore gets across to a fixed part or the clamp section becomes small.
[0011]
[Example] Hereafter, the example of this invention is explained in detail based on a drawing.
[0012] One example is first explained based on drawing 1 .
[0013] As shown in drawing 1 (a), the wire rod support 1 has connection section 1c which connects fixed part 1b, and clamp section 1a and fixed part 1b with clamp section 1a and a substrate.

[0014] Clamp section 1a is formed in the shape of [of a semicircle] a curve, and spherical lump 1e is formed in both points.
[0015] 1f of portions of 1d of monotonous sections and an arrow form constitutes fixed part 1b, and it is inserted, shutting 1g of both wing sections of 1f of portions of an arrow form to the insertion mouth of a substrate.
[0016] Next, damper section 1i inserted into 1h of both bays and both the bays in alignment with the axis constitutes connection section 1c. Damper section 1i is formed as two crotches whose each is bay 1j. Each of 1h of both bays and damper section 1i has a circular cross-section configuration, and has become a diameter of the same in this example. When 1h of both bays approaches mutually or they keep away, bending arises in each bay 1j of damper section 1i. By making small the crossed axes angle theta of bay 1j, the same effect can be acquired also by becoming possible to absorb more flexible force of the direction of an axis, and making small the path of the cross section of damper section 1i.
[0017] This wire rod support 1 manufactures the metal mold in which above-mentioned clamp section 1a, fixed part 1b, and connection section 1c that has damper section 1i were formed, and is manufactured in one by injection molding of synthetic resin using this metal mold. Therefore, damper section 1i is fabricated simultaneously with injection molding of the wire rod support 1, the special process for forming damper section 1i is not needed, and the cost rise by preparing damper section 1i is hardly produced.
[0018] thus -- constituting -- **** -- this wire rod support 1 -- for example, TV -- applying -- drawing 1 (b) -- setting -- 1g of both wing sections of fixed part 1b -- shutting -- insertion of the substrate 2 of TV -- it inserts in a hole (illustration ellipsis) Then, since 1g of both wing sections opens again and a substrate 2 is pinched by 1d of monotonous sections and 1g of both wing sections of a fixed part after inserting, fixed part 1b is fixed to a substrate. Next, the wire rods 3, such as an acoustic signal line and a video-signal line, are put into clamp section 1a, and spherical lump 1e prepared in the point of clamp section 1a is twined mutually. Thereby, a wire rod is clamped by clamp section 1a, and is supported by the predetermined position on a substrate.
[0019] TV receives predetermined force, such as vibration, when the force of the rectilinear which connects clamp section 1a and fixed part 1b to the wire rod support 1 acts, bending arises easily in each bay 1j of 2 crotch 1i which is bend material and whose each is a bay, and the force of the above-mentioned rectilinear is absorbed easily. Moreover, when the force of the right-angled direction acts on the above-mentioned rectilinear and bend material 1i exists in the wire rod support 1, bending arises in each of the bay 1j, and the force of the right-angled direction is absorbed to the above-mentioned rectilinear. By these, the force of acting on clamp section 1a and fixed part 1b can be made very small, the omission of the wire rod support 1 and the blank of a wire rod 3 are prevented, performances, such as quality of image and tone quality, are maintained, and safety is maintained.
[0020] Next, other examples of this invention are explained based on drawing 2 . Only the damper section differs from drawing 1 (a), and, as for drawing 2 , other composition is the same as that of drawing 1 .
[0021] Drawing 2 (a) has prepared damper section 1k which consists of linear bend material of an ellipse form, and there is for the direction of an axis about the direction of a minor axis of an ellipse form. changing the length of the major axis of an ellipse form, and a minor axis -- moreover, a member -- the strength of the damper for which it asks can be obtained by changing the path of a cross section And since the ellipse form was used, the inclination of clamp section 1a can be made equal by the case where the force of the right on this drawing works to clamp section 1a, and the case where the leftward force works. This drawing (b) has prepared 1m of damper sections which consist of linear bend material of one wave-like period. Also in this case, the inclination of clamp section 1a can be made equal by the case where the force of the right on this drawing works to clamp section 1a, and the case where the leftward force works. In drawing 2 (a) and (b), the damper section can be simultaneously fabricated at the time of injection molding using the synthetic resin by metal mold.
[0022] The configuration of the damper section can consider many things besides the three above-mentioned examples.
[0023] The wire rod support of this invention is applied to the electric appliance with which wire rods, such as the interior of audio sets, such as a stereo besides the interior of TV, are arranged in the interior.
[0024]
[Effect of the Invention] Since the wire rod support of this invention prepared the damper section which consists of bend material, it can make the damper section able to absorb the force which the wire rod support received, can make small enough the force of acting on a fixed part or the clamp section, and can fully prevent the blank of a wire rod, and the omission of a fixed part. Therefore, a wire rod approaches a portion with much disturbance of a circuit, degradation of performances, such as quality of image and tone quality, is produced, or a wire rod approaches DC at the upstream AC power before conversion, and it is fully prevented that a problem arises at safety etc., so that the safety standard is not filled.

[Translation done.]

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CLAIMS

[Claim(s)]
[Claim 1] The wire rod support characterized by providing the damper section which was prepared between the clamp section which clamps a wire rod, the fixed part fixed to the holddown member-ed in an electric appliance, and the above-mentioned clamp section and the above-mentioned fixed part, and which consists of bend material.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] This drawing (a) is a plan of the wire rod support of one example of this invention, and this drawing (b) is a perspective diagram showing the state where fixed the wire rod support of this drawing (a) on the substrate, and the wire rod was supported.
[Drawing 2] This drawing (a) and this drawing (b) are plans of the wire rod support of other examples of this invention, respectively.
[Drawing 3] It is the plan of the conventional wire rod support.
[Description of Notations]
1 Wire Rod Support
1a Clamp section
1b Fixed part
1i, 1k, 1m Damper section

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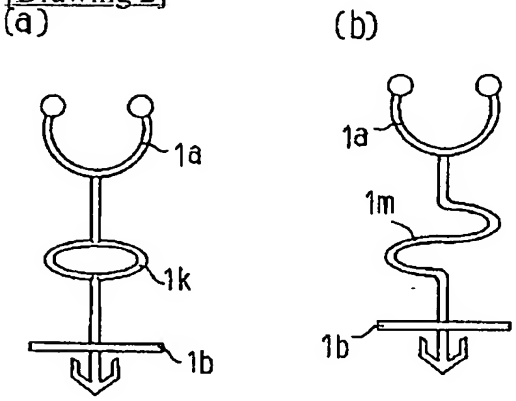
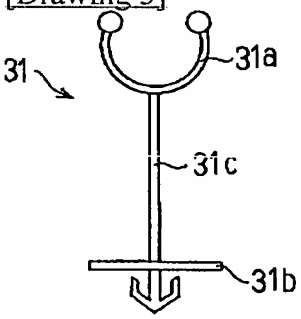
DRAWINGS

[Drawing 2]

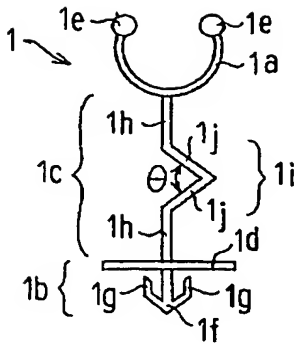


[Drawing 3]



[Drawing 1]

(a)



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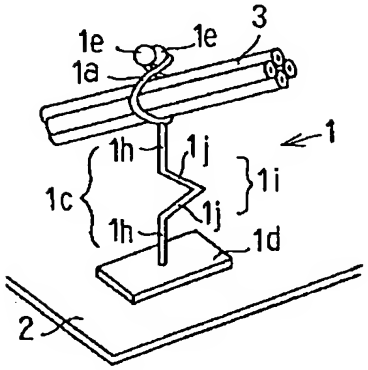

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(22)Date of filing : **20.11.1991**

(71)Applicant : **SONY CORP**
(72)Inventor : **KUEDA SHINJI**
OGAWA SEIICHI
TANIDA KIKUO

(54) LINE MATERIAL SUPPORTER

(57)Abstract:
PURPOSE: To prevent the coming off of a line material or the coming off of a line supporter in the case that force such as vibration, etc., is added, in a line supporter which supports the line material such as a signal transmission line, etc., in the specified position inside electric equipment.
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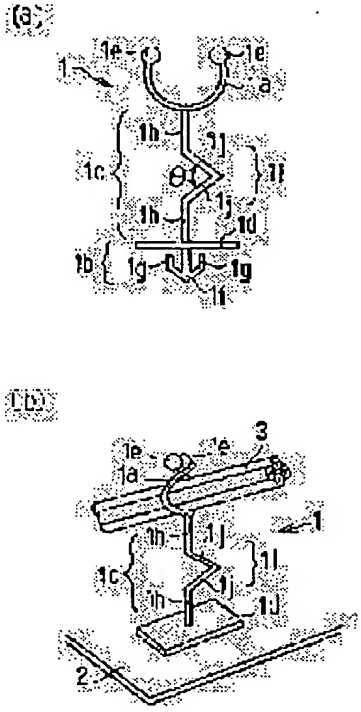

LEGAL STATUS

[Date of request for examination]

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[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

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[Patent number]

[Date of registration]

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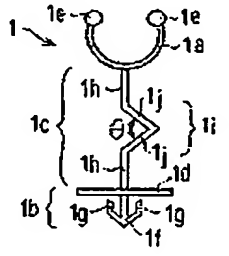
(54)【発明の名称】　線材支持具

(57)【要約】

【目的】　信号伝達線等の線材を電気器具内の所定の部分に支持する線材支持具において、振動等の力が加わった場合における線材の外れや線材支持具の外れを防止する。

【構成】　クランプ部１ａと固定部１ｂとの間に、湾曲部材からなるダンパー部１ｉを設ける。これにより振動等の力が線材支持具１に加わった場合に、ダンパー部１ｉによりその力が吸収され、線材３のクランプ部１ａからの外れや線材支持具１の基板２等からの外れが防止される。

(a)



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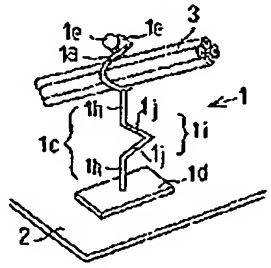

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【特許請求の範囲】

【請求項1】　線材をクランプするクランプ部と、電気器具内の被固定部材に固定される固定部と、上記クランプ部と上記固定部との間に設けられた、湾曲部材からなるダンパー部とを具備していることを特徴とする線材支持具。

【発明の詳細な説明】

【0001】

【産業上の利用分野】この発明は、電気器具の内部空間に配線される線材を支持する線材支持具に関するものである。

【0002】

【従来の技術】従来の線材支持具31は、図3に示すように、クランプ部31a、電気器具の内部空間の被固定部材に固定される固定部31b，およびクランプ部31aと固定部31bとをつなぐ連結部31cとからなっており、例えばテレビセットにおいて、固定部31bを基板の上に固定して、音響あるいは映像の信号伝送線等の線材を、クランプ部31aに、クランプ部31aの上部を絡ませることにより、クランプして、線材を基板上の所定位置に支持していた。

【0003】そして連結部31cは、クランプ部31aと固定部31bとを直線状に結ぶことにより構成してあった。

【0004】

【発明が解決しようとする課題】従って、電気器具に振動が加えられた場合、その振動は線材にも伝わるが、線材は所定の重さがあるために、大きな振動慣性力となって、線材支持具にその力が逆に伝わる。

【0005】しかしながら、上述にように連結部31cは直線状に形成してあるため、上記の線材支持具31に伝わった力はそのままの大きさで固定部31bへ引張力あるいは圧縮力として伝わり、あるいはその反動としてそのままの大きさでクランプ部31aへ圧縮力あるいは引張力として伝わる。すなわち、振動試験等において、連結部31cにストレスを加えた場合、ほとんど伸縮できない連結部31cはストレスを吸収できずに、ストレスはそのまま固定部31bおよびクランプ部31aに加わってしまった。

【0006】従って、これにより、固定部31bが基板等より外れたり、クランプ部31aが解けて線材が外れたりするという問題点があった。このとき、特に、線材が回路の妨害の多い部分に近づけば画質や音質等の性能の劣化の原因となり、また線材がDCへ変換前の一次側AC電源に近づけば、安全規格を満たさないほど安全性に問題が生じる。

【0007】そこで本発明の目的は、力が加えられた場合においてもその力を十分に吸収可能な線材支持具を提供することにある。

【0008】

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【課題を解決するための手段】上記目的を達成するために本発明の線材支持具は、線材をクランプするクランプ部と、電気器具内の被固定部材に固定される固定部と、クランプ部と固定部との間に設けられた、湾曲部材からなるダンパー部とを具備している。

【0009】ここに湾曲部材とは、滑らかに曲がっている部材のみならず、鋭角に曲がっている部材をも含まれる。

【0010】

【作用】クランプ部と固定部との間に湾曲部材が設けられているため、線材支持具に加わった力が湾曲部材へ伝わって、湾曲部材の曲げ力として吸収され、従って固定部やクランプ部へ伝わる力が小さくなる。

【0011】

【実施例】以下、本発明の実施例を図面に基づいて詳細に説明する。

【0012】まず一実施例を図1に基づいて説明する。

【0013】図1（a）に示すように、線材支持具1はクランプ部1a、基板との固定部1bおよびクランプ部1aと固定部1bとをつなぐ連結部1cとを有している。

【0014】クランプ部1aは、半円形の曲線状に形成され、両先端部に球状の塊1eが形成してある。

【0015】固定部1bは、平板部1dおよび矢形の部分1fにより構成してあり、基板の挿入口に矢形の部分1fの両羽根部1gをすぼめながら差し込むようになっている。

【0016】次に、連結部1cは、軸線に沿った両直線部1hおよび両直線部に挟まれたダンパー部1iとにより構成してある。ダンパー部1iは、それぞれが直線部1jである2股部として形成してある。両直線部1hおよびダンパー部1iはいずれも断面形状が円形であり、本実施例では同一径となっている。両直線部1hが互いに近づいたり、遠ざかったりするとき、ダンパー部1iのそれぞれの直線部1jに曲げが生じる。直線部1jの交差角θを小さくすることにより、軸線方向の伸縮力をより多く吸収することが可能となり、また、ダンパー部1iの断面の径を小さくすることによっても同様の効果を得ることができる。

【0017】本線材支持具1は、上記クランプ部1a，固定部1b，およびダンパー部1iを有する連結部1cを形成した金型を製作し、この金型を用いて合成樹脂の射出成形により、一体的に、製造される。従って、ダンパー部1iは線材支持具1の射出成形と同時に成形され、ダンパー部1iを形成するための別途の工程を必要とせず、ダンパー部1iを設けることによるコストアップは殆ど生じない。

【0018】このように構成してあり、本線材支持具1を例えばテレビセットに適用し、図1（b）において、固定部1bの両羽根部1gをすぼめてテレビセットの基

板2の挿入孔（図示省略）に挿入する。すると、挿入した後、両羽根部1gが再び開いて、基板2が固定部の平板部1dと両羽根部1gとに挟まれるので、固定部1bが基板に固定される。次に音響信号線、映像信号線等の線材3をクランプ部1aに入れて、クランプ部1aの先端部に設けられた球状の塊1eを互いに絡ませる。これにより線材がクランプ部1aにクランプされ、基板上の所定位置に支持される。

【0019】テレビセットが振動等の所定の力を受け、線材支持具1に、クランプ部1aと固定部1bとを結ぶ直線方向の力が作用した場合、湾曲部材である、それぞれが直線部である2股部1iの、それぞれの直線部1jに曲げが容易に生じて、上記直線方向の力を容易に吸収する。また、線材支持具1に、上記直線方向に直角方向の力が作用した場合においても、湾曲部材1iが存在することにより、そのそれぞれの直線部1jに曲げが生じて、上記直線方向に直角方向の力を吸収する。これらにより、クランプ部1aおよび固定部1bに作用する力を非常に小さくすることができ、線材支持具1の抜けや線材3の外れが防止され、画質や音質等の性能が維持され、安全性が維持される。

【0020】次に本発明の他の実施例を、図2に基づいて説明する。図2はダンパー部のみが図1（a）と異なっており、他の構成は図1と同一である。

【0021】図2（a）は楕円形の線状の湾曲部材からなるダンパー部1kを設けてあり、楕円形の短径方向を線線方向にとってある。楕円形の長径および短径の長さを変えることにより、また部材断面の径を変えることにより、求めるダンパーの強さを得ることができる。かつ楕円形を用いたため、クランプ部1aに同図上の右方向の力が働いた場合と、左方向の力が働いた場合とで、クランプ部1aの傾きを等しくすることができる。同図（b）は、波形の1周期の線状の湾曲部材からなるダンパー部1mを設けてある。この場合においても、クランプ部1aに同図上の右方向の力が働いた場合と、左方向の力が働いた場合とで、クランプ部1aの傾きを等しくすることができる。図2（a）（b）の場合においても、ダンパー部は、金型による合成樹脂を用いた射出成形時に、同時に成形することが可能である。

【0022】ダンパー部の形状は、上記3つの実施例以外にも、種々考えることが可能である。

【0023】本発明の線材支持具は、テレビセットの内部の他、ステレオ等のオーディオセットの内部等、線材が内部に配設される電気器具に適用される。

【0024】

【発明の効果】本発明の線材支持具は、湾曲部材からなるダンパー部を設けたため、線材支持具が受けた力をダンパー部に吸収させることができ、固定部やクランプ部に作用する力を十分に小さくすることができ、線材の外れや固定部の抜けを十分に防止することができる。従って、線材が回路の妨害の多い部分に近づいて、画質や音質等の性能の劣化を生じたり、線材がDCへ変換前の一次側AC電源に近づいて、安全規格を満たさないほどに安全性に問題が生じる等が十分に防止される。

【図面の簡単な説明】

【図1】同図（a）は本発明の一実施例の線材支持具の平面図であり、同図（b）は同図（a）の線材支持具を基板上に固定して線材を支持した状態を示す斜視図である。

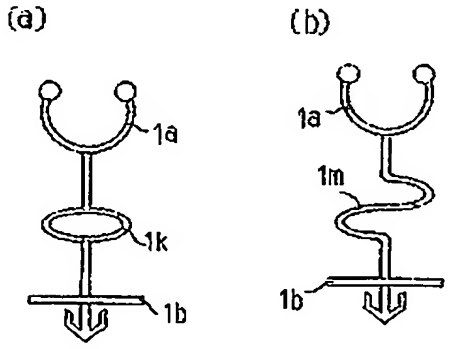
【図2】同図（a）および同図（b）はそれぞれ、本発明の他の実施例の線材支持具の平面図である。

【図3】従来の線材支持具の平面図である。

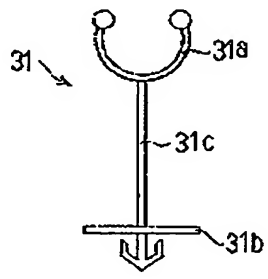
【符号の説明】

1　線材支持具
1a　クランプ部
1b　固定部
1i，1k，1m　ダンパー部

【図2】

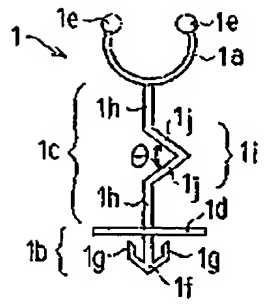


【図3】

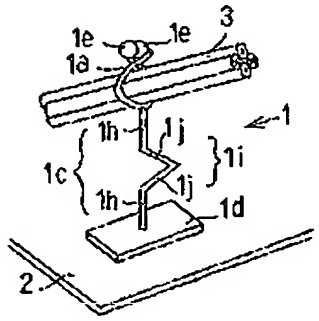


【図1】

(a)


1e
1e
1
1a
1h
1j
1c
θ
1i
1j
1h
1d
1b
1g
1g
1f

(b)


1e
1e
3
1a
1
1h
1j
1i
1c
1j
1h
1d
2